



Department of
**Primary Industries and
Regional Development**



Grains, Seeds and Hay
Industry Funding Scheme

Report to grain growers Bedstraw Eradication Program 2018/19

Foreword

On behalf of my fellow committee members, I am pleased to present this report outlining the delivery and outcomes of the 2018/19 Bedstraw Eradication Program to the contributors of the Grains, Seeds and Hay Industry Funding Scheme (GSHIFS).

The two properties affected by three-horned bedstraw are nearing completion of the final stage of the Release Phase of the nine-year eradication program. This will be an impressive achievement given the difficulty in eradicating any weed from the environment.

The efforts of the program staff, and the cooperation and support of the landholders, have stopped the weed setting seed whilst exhausting the soil-borne seed bank. This is a major achievement given the ability of the seed to remain viable in the soil for many years – and the reason for such a nine-year program.

Although there is some more work to be done to eradicate the weed from a small number of non-arable areas, I am confident that we will be able to say that bedstraw has been eradicated from arable areas in the coming months – and have greatly reduced the risk of three-horned bedstraw to the broader industry in Western Australia (WA).

This would not have been possible without the support of WA grain/seed/hay growers.

Grower contributions to the GSHIFS have enabled a comprehensive program to be delivered – six consecutive years of winter spray treatments, followed by a three-year release protocol. In addition, with Cooperative Bulk Handling (CBH), the GSHIFS is monitoring grain samples for bedstraw seed. This work means we will be able to detect bedstraw early, greatly reducing the risk of spread.

I look forward to 2019/20 and moving closer to our goal of eradicating three-horned bedstraw from WA.

Thank you all for your contribution to this important work.

Rohan Day
Chairman
Grains, Seeds and Hay Industry
Funding Scheme Management Committee
30 June 2019

Review

The Grains, Seeds and Hay Industry Management Committee (GSHIMC) believes the current program is delivering the best value for the funding provided and is achieving the project outcomes of containment and eradication.

Approved programs are developed annually for each infested property in consultation with GSHIMC, the Department of Primary Industries and Regional Development (DPIRD) and the landholders detailing management actions, estimated costs and timeframes of the agreed actions.

The two infested properties have now entered the final Release Phase of a nine-year eradication program. The program is implemented by DPIRD and includes six consecutive years of winter spray treatments, followed by a three year release protocol and post-eradication monitoring phase. Machinery inspections, quarantining, landholder compliance winter spraying and end of season double-knock herbicide treatments form the key components of the Approved Program.

All program milestones have been met and the program has been delivered under budget.

Program milestones

- Both properties are now into the final year of the three-year Release Phase of the Eradication Program.
- Thorough ground searching has been undertaken on both properties, with no plants found in the arable areas of the infested paddocks.
- No plants have been found on one property since 2014.
- Cooperation and support by the landholders remains at a high level.
- Grain sampling through CBH Eyefoss™ analysis has greatly enhanced the program surveillance. To date no new infestations have been detected with this technology.

Program expenditure

The total cost of the 2018/19 Program was \$304 378 (as at 30 June 2019), \$128 235 under the budgeted amount of \$432 613. The significant underspend is attributed to the large contingency built into the budget. This contingency is for additional spraying and operational activities that may be required. In 2018/19 one contingency treatment was needed.

Approximately \$244 378 of the expenditure was directed to program support and operational activities such as control treatments, regulation and property surveillance (Table 1).

A further \$60 000 was allocated to Eyefoss™ grain surveillance.

Table 1 Program expenditure 2018/19

Operational expenditure	
Employee expenses	\$131 765
Vehicles and administration	\$58 807
Eyefoss™ surveillance	\$60 000
Contractors	\$36 871
Chemicals	\$9 672
Travel expenses	\$6 452
Communication	\$541
Other expenses	\$270
Minor equipment	\$0
Total expenditure	\$304 378



Recent improvements

Continuous improvement remains an important part of the Bedstraw Program's ongoing development and effectiveness.

Significant refinements continued in the delivery of the Program in 2018/19. These included:

- Further germination enhancing and seed destruction techniques through the burning of identified bush blocks.
- Clearing and tidying bush edges to improve spraying application by removing overhanging branches and fallen trees.
- Rock pile levelling to remove any potential seed storing sites.
- Contingency treatment options to allow for seasonal variations and program needs.

Compliance

Audit and compliance remain a strong focus of the program with strict quarantine protocols in place and maintained by DPIRD officers on both properties to prevent bedstraw spread outside the existing boundaries. This includes clean down processes for the movement of vehicles, machinery and equipment in and out of the quarantined areas and restricting stock access. Quarantine release processes were followed with full landholder and contractor cooperation.

Auditing of all treatments and operations occurred to ensure successful herbicide application and coverage over the whole of the required areas as well as ensuring clearing operation requirements were being met.

DPIRD assist the landholders with regulatory and operational facets of the program ensuring both the Approved Program and quarantine requirements are being met.



Industry Funding Schemes

The Bedstraw Eradication Program continues to operate under the Biosecurity and Agricultural Management Industry Funding Scheme (Grains) Regulations 2010. Responsibility for approving the funding and operations of the program reside with the GSHIMC initially appointed by the Minister in June 2010.

The GSHIMC met in February 2018 and approved the programs for the control of skeleton weed and the eradication of three-horned bedstraw on behalf of the WA Grains Industry. The Committee recommended a contribution rate on grains, seeds and hay be retained at 25 cents per tonne for grain and 12.5 cents per tonne for hay. These funds are used to support the Skeleton weed and Bedstraw Programs, with Skeleton weed allocated 90% of the funds collected.

The reduced contribution rate from 2017 reflects the higher than average amounts collected over the last few years and the willingness of the Committee to respond to this and decrease the burden on landholders, when possible.

All contributions to the scheme are collected by purchasers of grain and hay and are paid into a GSHIFS Declared Pest Control and Compensation Account, which is managed by DPIRD in consultation with the GSHIMC.

Research

The program has continued to trial new surveillance techniques to detect bedstraw seed and plants in the field, with trials carried out using the GrainCam mounted to a combine during harvesting operations to operate autonomously, as previously it required manual intervention. Improvements and modifications are still being developed. Ongoing research for improving detection continues.

Extension and awareness

Neighbouring landholders of the affected property in West Arthur were provided a status report of the bedstraw eradication program and current procedures in place.

A new three-horned bedstraw factsheet has been developed to assist growers and the general public in identification and reporting tools.

Findings – Program results at a glance

Success of the Program is evident with all paddocks on both properties having now entered the final year of the three year release phase in 2019 with no plant findings in the arable areas. Successful and timely treatments and searches have prevented seed set and is exhausting the seed bank.

Identified bush areas within the release paddocks on the West Arthur property remain under quarantine. These areas pose the highest risk as new finds appear to be linked to soil movement during recent bush clearing operations.

No bedstraw seeds were detected during image analysis of 7 096 seed samples screened with the use of EyeFoss™ technology. This result provides some level of confidence that bedstraw has been contained to the two known properties and has not been identified in the grain growing areas of WA.

Continued surveillance is recommended as the risk of bedstraw incursions into WA is ever-present and early detection is the best strategy to quickly eliminate infestations at a minimal cost.

Infested properties

There are currently two properties in WA known to be infested with three-horned bedstraw (*Galium tricornutum*). One property in the West Arthur shire has eight paddocks equating to 280 hectares under quarantine and the second property is in the Merredin shire with one paddock of 48 hectares under quarantine.

West Arthur: In 2018, six of the eight quarantined paddocks progressed to Year Two of the three year release phase of the eradication program. In 2019, six of the eight quarantined paddocks proceeded to the final year of the release phase with the remaining two paddocks progressing to Year Two of the release phase.

Merredin: In 2018 the quarantined paddock progressed to Year Two of the three year release phase of the eradication program and in 2019 it proceeded to the final year. The release phase requires the quarantined areas to be monitored for bedstraw plants. After three 'clean' years the property can be released from quarantine.

Area searched

Whole of paddock searches were conducted during September by DPIRD search teams on both properties (an estimated 330 hectares). This included the release paddocks, all bush areas within the quarantine boundaries and all non-quarantine areas. Continuous monitoring of known hotspots also occurred throughout the season.

The eradication activities were complemented by a passive surveillance program funded by the GSHIFS in partnership with CBH and Bunge. A total of 7096 grain samples from the 2018 harvest were collected from targeted CBH and Bunge sites and screened using EyeFoss™ screening technology. EyeFoss™ is used by CBH for commercial grading of grain and to screen grain for contamination with bedstraw seed. All samples that the EyeFoss™ reported as "suspect" were visually inspected to confirm that no bedstraw was present.



Infested area

West Arthur: No bedstraw was found in any arable areas. Approximately 12 hectares of bush area within the quarantined paddocks are known to be infested. During the 2018 season, 22 bedstraw plants were found in four of the bush areas.

Merredin: Bedstraw has not been detected since 2014.

Control treatments

Timely and successful treatments were applied to all quarantined areas with both properties receiving a double knock treatment at the end of the season, including those paddocks in the release phase. This provides confidence that any undetected bedstraw will not survive. The West Arthur property also received treatment to designated bush blocks, as well as a grass control treatment to most of the arable areas to reduce grass cover to assist in searching for bedstraw.

All operations were audited by DPIRD officers for treatment effectiveness.

Planned improvements to the program in 2019/20

A meeting with each landholder and DPIRD staff was held at the end of the 2018 Approved Program activities season, to review the program and look at what is working well and identify areas for improvement. A meeting with each landholder and DPIRD staff was also held at the beginning of the 2019 season to discuss and finalise the 2019 Approved Program activities.

Some of the main items discussed were:

- Clearing and tidying bush edges and rock heaps was successful in improving spray application in designated locations and the burning of leaf litter in designated bush areas.

Continue bush, rock push up and burning operations at identified locations as these assisted the program to manage bedstraw by promoting germination and destroying any potential seed.

- Erosion in the quarantine paddocks due to the eradication treatments and restrictions applied to the quarantine paddocks, paddock surfaces are mostly bare of vegetation and are prone to wind and/or water erosion.

Incorporate optional light cultivation (scarifying) of arable areas in quarantine paddocks in the Release Phase to help manage potential erosion for the 2019 Approved Programs.

- The borders of the Bedstraw Quarantine areas within the West Arthur property are to be reviewed. This will allow most of the arable area to (potentially) be released at the end of the 2019 Approved Program.

Designated bush and border areas where bedstraw was present in the quarantined paddocks will be delimited to further define the Quarantine area, including defining the area by fencing to exclude stock.

The entire property at Hines Hill will be released from quarantine pending a clear search this year.

- Review the status of paddocks entering the Release Phase of the Eradication Program.

Define and allow previously quarantined areas that are now free of bedstraw to progress through the Release Phase.

- Ongoing awareness raising of bedstraw as well as the promotion of bedstraw identification and reporting is needed within farmers and the general public.

Enhance education and awareness by including bedstraw information with skeleton weed awareness activities at identified field days and farmer events as well as updating website.

